NEPHROTOMY FOR STONE IN THE KIDNEY; EXCESSIVE HEMORRHAGE; NEPHRECTOMY; RECOVERY.*

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B. B. Machinist, 31 years of age, married, with a family, one of whom has tuberculosis of the hip joint, came to my office complaining of deep-seated pain in the right lumbar region of fifteen years duration. This pain was dull in character, more or less constantly present, frequently underwent exacerbations both by day and night and necessitated his laying off work for about two days every week. During the fifteen years the pain had never radiated to the shoulder or to the testis, and though often brought on by active movements, yet frequently occurred when he was entirely at rest. There had never been any frequency of micturition nor any discoloration of the skin. He had vomited only on two occasions and his bowels had been regular. He had never noticed anything abnormal about the urine or about the bowel discharges, he was losing no weight, and in fact apart from the pain, considered himself an exceptionally healthy man, having previously suffered only from influenza. His pain had been variously ascribed to chronic appendicitis, gallstone trouble, stomach adhesions, lumbago and kidney gravel by physicians who had seen him during some of the exacerbations above referred to. To relieve these he had been in the habit of taking hot gin and water which he considered only fairly efficacious.

Examination showed a short, spare, muscular man with clear skin and conjunctivæ, whose heart and lungs were sound; whose liver and spleen were normal in size, and whose nervous, glandular, locomotory and hemopoietic systems were healthy. There was some rigidity of the right side of the abdomen both of the anterior and posterior muscles, this rigidity being more marked in the upper quadrant. There was tenderness in the right loin anteriorly and posteriorly and pressure all along the 12th rib caused pain.

The right diaphragm was higher than the left, moved to a less extent, and the respiratory murmur over the right lung base was faint, the percussion note, however, being normal. There was no tenderness at McBurney's point. He could actively move and I could passively stretch his muscles and ligaments without causing him pain, but jumping off a chair in my office produced a characteristic exacerbation.

Stomach examination revealed nothing abnormal. The tongue was clear, the appetite good. The rectal examination negative. Immersion in a hot bath relaxed his abdomen and I could then palpate the lower pole of his right kidney which was distinctly tender on the slightest pressure, whilst Murphy's maneuver elicited no gall bladder tenderness. Each twenty-four hours urine was collected for a week and a specimen examined daily, as also the urine passed after handling the kidney (and in this connection I would add that it is only gross changes after such handling that have a real clinical significance). The average amount of urine for twenty-four hours was from 45 to 50 oz.; specific gravity 1020, acid containing no albumen or sugar, but a few epithelial and white blood cells and a few calcium oxalate crystals; nothing positive.

Diagnosis. In view of the above findings it seemed that at this time the appendix, gall bladder, stomach and lumbar muscles as causal agents of the pain could be definitely ruled out, and that the right kidney was at fault; that there was probably some perinephritis involving the diaphragm, particularly the fasciculus arising from the last rib. Moreover, the fixed pain, the duration, the tender lower pole of kidney with absence of anything abnormal in the urine except the few crystals; the maintenance of the general health, the exacerbation produced by jumping off the chair, indicated a renal calculus as the most likely lesion, this calculus probably being of the hard variety firmly fixed in the surrounding tissues. Such a diagnosis was made.

A radiogram was taken and showed distinctly the shadow of the stone and the absence of any in the left kidney and ureter, the fluoroscope giving the same result. I have brought here tonight a print which shows distinctly the shadows cast by the kidneys and the spleen, as well as the more transparent areas of the ascending and descending colon, and which thus demonstrates what an indispensable adjuvant the X-ray is to our other clinical methods of diagnosis.

Knowing the patient had a left kidney free from calculus and normal in size, and that he was passing a normal amount of normal urine, I did not segregate his bladder or catheterize his ureter; after meditation I consider such an omission to have been an error and that scientifically I had no right to assume a fact, the truth or fallacy of which I could readily have demonstrated. I asked Dr. Terry to aid me and for the future conduct of the case we are equally responsible.

Operation. The usual posterior oblique incision was made in the right loin and the kidney exposed. It was higher up under the ribs than usual, large, congested, and adherent to the surrounding tissues, more particularly to the diaphragm. The calculi could be easily palpated in its lower half. There was some difficulty in delivering the kidney, but this was finally accomplished, though looking back we believe that a speedier and less traumatic way of doing so would have resulted from a preliminary, subperiosteal division of the twelfth rib. An incision was made into the pelvis along the anemic line, the knife there striking the stone. This incision was extended to include about one-third of the length of the kidney. The stone of the oxalic acid variety was found to be irregular and its processes very firmly fixed in the calices. It was loosened as much as possible with a blunt dissector, but its extraction was difficult, so firmly embedded were its component parts. After removal of the pelvic stone, another smaller one was found in the kidney tissue. A finger was introduced into the pelvis and the other calices explored and a ureteral sound passed. In view of the congestion the organ was now decapsulated, three chromic gut mattress sutures introduced, the kidney replaced, and the external wound closed except for a cigarette drain down to the kidney. There was extremely little hemorrhage throughout the operation, the incision along the anemic line giving apparently every satisfaction.

After progress of the patient. The after treatment was as usual. During the first twenty-four hours 17½ ounces of dark red urine were passed. During the second twenty-four hours 19 ounces of dark red urine were passed. On the morning of the third day the cigarette drain was removed. This was followed by the oozing of about six ounces of dark red blood. The wound was plugged and the hemorrhage ceased, to be again temporarily renewed that same day during a bowel movement; the patient then losing about two ounces. The wound otherwise was quite healthy and that night his tongue was clean, his temperature 98.6°, pulse 84, respiration 22, the amount of dark red urine passed in the third twenty-four hours being fourteen ounces.

On the morning of the fourth day he suffered from an attack of renal colic due to the passage of a blood clot. From that time to the morning of the seventh day after operation he passed varying amounts of blood in his urine, there being, however, no further hemorrhage from the wound. Sometimes the urine would be almost clear, but the bleeding

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would again recur. During this time uremic symptoms developed and he became a very sick man. On the morning of the seventh day he, for the first time, passed clear, normal urine; thus for the first time demonstrating a normal physiological left kidney; but now his right loin began to fill up. His pulse was 140, weak and irregular. We at once opened up the wound. Its margins were infiltrated with partially coagulated blood clot. The kidney lay in a bed of this same clot. This was rapidly shelled out, but owing to retraction and fixation of the renal pedicle the kidney could not be delivered and any attempt to do so would, we feel sure, have led to tearing of the pedicle, hence knowing the other kidney was healthy and as blood was flowing freely from the whole incision and more particularly from the upper angle under the ribs, we decided to do a nephrectomy. The pedicle was clamped piecemeal with several clamps and the kidney excised, the clamps, in view of the patient's condition, being left in position. During the operation Dr. Sherman kindly infused the patient with a solution of epinephrin. The examination of the removed kidney showed that the bleeding came from the whole cut surface, that there was no opened large vessel, and no calculus had escaped notice. There had been practically no attempt at healing, the raw surfaces being covered with unorganized blood clots.

The future progress of the patient was satisfactorily uneventful. The forceps were removed at the end of 72 hours, the wound quickly filled up and completely healed and the man is now able to work six days in the week without pain and is passing daily a normal amount of normal urine.

RECURRENT ECLAMPSIA, WITH REPORT OF CASE.

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I WAS recently called to attend a supposed confinement case, twenty miles from town, the mounted messenger urging haste. On my arrival at the cabin, I found the patient in the throes of eclampsia, and I think that I may be pardoned for dreading the outcome, as hospital or medical assistance was out of the question. To those of us who have had to deal with such cases, the picture presented by the unfortunate subject during an attack can never be forgotten.

Patient aged 20 years, married, became pregnant for the first time eighteen months ago. Seven months later, she was suddenly seized with severe frontal headache, cardialgia and dimness of vision, followed by convulsions. Drs. Dwinell and Tebbe, of Montague, were summoned. Notwithstanding their efficient medical treatment during 27 attacks covering a period of 14 hours, a dead child was spontaneously delivered. She had no further attacks, but remained in a more or less comatose condition for 48 hours. From that time until the present attack, her mind has been clouded, and general health poor.

The present attack commenced in a manner similar to the first, severe frontal headache and cardialgia, followed by sudden and complete loss of vision. Previous to my arrival, she had five attacks covering a period of three and a half hours. I found her in a sixth attack, lasting four minutes, followed by profound coma, temperature 101°, pulse weak and rapid. There were no signs of the onset of labor; fetal heart or movements could not be distinguished. A seventh attack occurred in twenty-five minutes, followed by four more at diminished intervals, and increasing severity. Seven and a half hours after the initial attack, temperature 104°, pulse 140, weak and compressible. As hot pack, morphin and chloroform were apparently unavailing, and still no signs of labor, I decided to empty the uterus.

The cervix was not dilated, but dilatable, pressure from above over the fundus rendered the subsequent efforts at dilation easier. Following the method advocated by Philander Harris of New Jersey, with the left hand; then introducing the index and finally the middle finger of the right hand, and exerting steady traction at short intervals, first transversely, then obliquely, and finally antero-posterially, I succeeded in fully dilating in thirty-five minutes. Dehrssen, of Berlin, advocates making deep lateral incisions, but I did not consider it justifiable in this case, on account of the surroundings and the danger of irregular tearing, hemorrhage and subsequent infection. Following rupture of the membranes, and delivery with high forceps, of a dead child, the patient rested quietly for two hours, without, however, regaining consciousness. Then the fingers of her left hand began to twitch spasmodically, followed by a severe attack lasting four and a half minutes. Thirty-five minutes later, the significant twitchings of the fingers which had preceded all the previous attacks recommenced. I immediately administered chloroform, and was gratified to find that it had the desired effect, the fingers relaxed and there were no subsequent attacks.

Since then, the patient has had an uninterrupted convalescence. Twelve hours following delivery, she was perfectly conscious, vision clear, urine contained but a trace of albumen. At the present time, her mental condition is better than it has been at any time during last eleven months.

On looking over my authorities, I find considerable divergence of opinion as to the frequency of this dread disease. Garrigues puts the ratio at 1 in 330; Auvard, 3 in 1,000; Martin and Kaltenbach, 1 in 500; Vinay, 1 in 250 to 260; Gellett, 1 in 357.48. In the Rotunda Hospital amongst 15,109 patients, the relative frequency of eclampsia was 1 in 359.73, i. e., .27%.

Regarding the several periods in which the disease is manifested, and the time in each of these periods Kaltenbach's statement is that while the disease may appear toward the end of pregnancy, it is more frequent in labor; most seldom after it. Pajot has given the following: During labor 100, before, 60, and after, 40. The recent studies of Goldberg including 1,120 cases show that in 21.07% the disease appeared in pregnancy; in labor, 56.34%; after, 22.59%. Bailly gives as the order of frequency: Pregnancy, labor, and the lying-in, and he has attributed the discrepancy among authorities, in part, to the fact that as the disease so commonly induces labor, cases that really belong in pregnancy have been included in those that belong to labor.

Regarding treatment, in the Rotunda Hospital it is directed chiefly toward two points: (1) The arrest of the fits; (2) the staving off of complications, (a) by administering sedatives, (b) by removing toxic substantives from the blood and tissues, (c) by emptying the uterus. (a) is accomplished by the chloroform and chloral treatment, and the morphia treatment. The chloroform and chloral treatment consists in administering upon the onset of the attack 30 grains of chloral hydrate by the rectum, and repeating every two hours until the fits cease, but not more than 3½ drams should be given in 24 hours.

The inhalation of chloroform is commenced as soon as any sign of the onset of the fit occurs, and continues until the fit ceases. The morphia treatment consists of the administration of large doses of morphine hypodermically, as recommended by G. Veit. It is considerably the better method of treatment and is carried out as follows: A half grain hypodermic is administered upon the onset of the first fit, and is followed every two hours by ¼ grain, until the fits cease; not more than 3 grains should be given in 24 hours.

(b) Purgatives are freely used, and every effort made to encourage free sweating. The kidneys are stimulated by hot stupes, and an abundance of fluid by mouth, if the patient is conscious; also by intravenous or subcutaneous injection of normal saline solution.—(Jardine.) At the Glasgow Maternity Hospital, in association with saline infusion, venesection, when possible, is extensively employed. Up to 17 ounces of blood have been withdrawn at one time with very satisfactory results.

In Vienna, in the Universitats-Frauenklinik, we were taught to rely mainly on hot baths, wet packs or hot air baths, chloroform and chloral, and failing in that, to empty the uterus; but the use of morphia was contraindicated. The four cases I saw treated in this manner; unfortunately, all resulted fatally.

Prognosis.—Jellett says: "The prognosis for the infant is always very grave; for the mother the prognosis varies according to the time at which the fits commence. It is worse when the onset of the fits occurs during pregnancy, or labor; it is best when they start during the puerperium. The greater the number of fits the worse the prognosis." The number of seizures may be very great. Kaltenbach refers to 80; Vinay to